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IS 12402-1 (1988): Mobile containers for solid waste, Part 1 General characteristics [MED 7: Material Handling Systems and Equipment]

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IS : 12402 (Part 1) - 1988

Indian Standard

(Reaffirmed 2001)

SPECIFICATION FOR MOBILE CONTAINERS FOR SOLID WASTE

PART 1 GENERAL CHARACTERISTICS

1. Scope — Covers the general characteristics of the mobile containers for solid waste (household refuse, industrial waste and others). It applies to containers whose capacity lies between:

$$120\ l\ {}^{+0}_{-10}\ \text{percent and}\ 1\,000\ l\ {}^{+10}_{-0}\ \text{percent}$$

2. Terminology — For the purpose of this standard, the following definition shall apply.

2.1 *Mobile Container for Solid Waste* — Container on wheels destined to receive solid waste and capable, in particular, of being mechanically emptied of waste which is then put into collecting vehicles and compating equipment.

3. Classification — Mobile containers shall be classified as follows:

a) *Class A* — containers with two fixed wheels, trolley type; and

b) *Class B* — containers with four pivoting castors.

4. Types — The containers shall be of the following two types.

a) *Normal Type (N)* — for waste of average density 0·2 kg/dm³* and of maximum density 0·4 kg/dm³, and

b) *Reinforced Type (R)* — for waste of average density 0·4 kg/dm³ and of maximum density 0·7 kg/dm³.

5. Capacity — The capacity of the containers in litre shall be as under:

Class A ±10 percent	Class B ±10 percent
120	500
240	750
330	1 000

6. Dimensions

6.1 *Wheels and Castors*

6.1.1 The minimum diameter and load per wheel or castor for containers shall be as follows:

Container	Capacity ± 10 percent (litres)	Type	Diameter of Wheel or Castor (mm)	Load per Wheel or per Castor (kN)
Class A	120	N	200	1·25
		R	200	1·25
	240	N	200	1·25
		R	200	1·25
	330	N	200	1·25
		R	200	1·25
Class B	500	N	160	1·00
		R	160	1·25
	750	N	200	1·60
		R	200	2·50
	1 000	N	200	1·60
		R	200	2·50

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*Usual case for household refuse loose in a container.

Non-Powered Materials Handling Equipment Sectional Committee, MCPD 20: Hand Trucks and Trolleys Subcommittee, MCPD 20 : 1 [Ref : Doc : MCPD 20 (780)]

Adopted 5 May 1988

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BUREAU OF INDIAN STANDARDS
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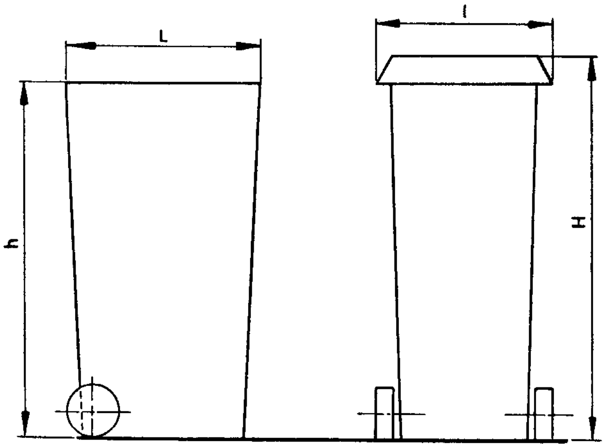
NEW DELHI 110002

6.2 *Containers*

6.2.1 *Class A* — The overall dimensions of class A container with the lid closed shall be as given in Table 1. The gripping or traction equipment and the hinges shall not protrude beyond the parallelepiped circumscribed.

TABLE 1 OVERALL DIMENSIONS OF CLASS A CONTAINER



Nominal Capacity (litre)	*L, Max* (mm)	*l, Max* (mm)	*h, Max* (mm)	*H, Max* (mm)
120	550	485	1 020	1 100
240	730	585*	1 020	1 100
330	875	660*	1 020	1 100

L : Overall length including lifting equipment

l : Overall width, lid closed

h : Height of container only

H : Height with lid closed

*In the case of lateral gripping, *l, Max* = 770 mm.

6.2.2 *Class B* — The overall dimensions of class B container with the lid closed shall be as given in Table 2. The gripping or traction equipment and the hinges shall not protrude beyond the parallelepiped circumscribed.

7. Requirements

7.1 *General*

7.1.1 The container shall be easy to move, clean and empty completely.

7.1.2 It shall be fitted with a closing device.

7.1.3 The interior of the container body shall be smooth and shall not include any protrusion which may be capable of retaining any waste. The closing device shall not hinder the emptying operation.

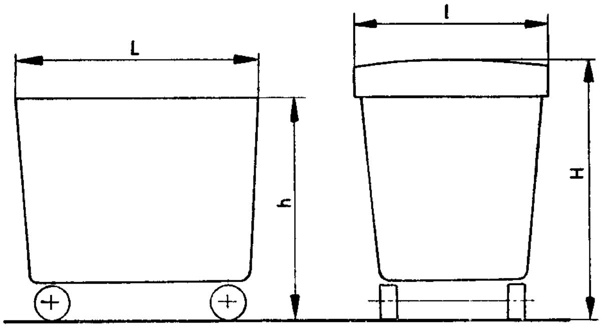
7.2 *Gripping Systems*

7.2.1 *Frontal and ventral gripping system* — All containers shall have a provision for equipping with a frontal and ventral gripping system. The dimensions of the two systems are defined in Appendix A.

7.2.2 *Other gripping system* — Any other gripping system (for example, lateral) may be added provided it falls within the dimensional limits fixed in this standard.

TABLE 2 OVERALL DIMENSIONS OF CLASS B CONTAINER

(*Clause* 6.2.2)



Nominal Capacity (litre)	*L,* *Max* (mm)	*l,* *Max* (mm)	*h,* *Max* (mm)	*H,* *Max* (mm)
500	1 370	650	1 100	—
750	1 370	770	1 250	1 470
1 000	1 370	1 080	1 250	1 470

L : Overall length including lifting equipment

l : Overall width, lid closed

h : Height of container only

H : Height with lid closed

7.3 *Locking Device when the Container is Stationary — Class B Container with Four Castors* — Each Class B container shall include a locking device when it is stationary, or possibly an optional locking, and shall satisfy the tests defined in IS : 12402 (Part 2)-1988 'Mobile containers for solid waste: Part 2 Methods of test' (*under print*). In case where locking acts upon the castors, it shall act at the minimum upon two adjacent castors.

7.4 *Plugged Outlet for Washing and Draining — Class B Container with Four Castors* — Each Class B container shall include a plugged outlet for washing and draining located at the lowest point on the container body. The minimum diameter of a plugged outlet shall be 40 mm. It shall be easily accessible.

7.4.1 For Class A containers, this device is optional.

7.5 *Control Device for the Purpose of Towage — Class B Container with Four Castors* — This device is optional and shall be arranged by mutual agreement between the customer and the supplier.

7.6 *Wheels and Castors*

7.6.1 *Class A containers* — The two wheels of Class A container are fixed. Metal parts shall be corrosion resistant and satisfy the tests specified in IS : 12402 (Part 2)-1988. In addition, the wheels shall conform to IS : 7369-1983 'Specification for wheels and castors (*first revision*)'.

7.6.2 *Class B containers* — The four castors shall be capable of pivoting, except when controlled in case of towage. Metal parts shall be corrosion resistant and satisfy the tests specified in IS : 12402 (Part 2)-1988.

When the container moves in a longitudinal direction, the castors shall be positioned in such a way that they do not exceed the corresponding overall dimensions of the container. In addition, the castors shall conform to IS : 7369-1983.

7.7 *Closing Device*

7.7.1 The closing device shall be made of any suitable material but shall be corrosion resistant and satisfy tests prescribed in IS : 12402 (Part 2)-1988.

Note — The gripping of the containers shall preferably be carried out with the lid closed. However, when the kinematics of the container does not permit this, the lid may be left open.

7.7.2 *Lid hinges* — In case the container is fitted with hinges, they shall satisfy the test prescribed in IS : 12402 (Part 2)-1988 and be easy to clean and lubricate, if necessary.

8. Designation

8.1 The mobile container for solid waste shall be designated by the following:

a) Name,
b) Classification,
c) Capacity full to the brim (in litres),
d) Type [normal (N) or reinforced (R)], and
e) Reference to this standard.

Example:

A mobile container for solid waste of class A having a capacity of 120 litres and of normal type (N) shall be designated as:

Mobile Container A 120 N — IS : 12402 (Part 1)-1988.

9. Marking — In addition to manufacturer's name or trade-mark, each container shall bear visibly the following information:

a) Designation,
b) Manufacturing number, and
c) Date of manufacture.

9.1 *Standard Marking* — Details available with the Bureau of Indian Standards.

APPENDIX A

(*Clause* 7.2.1)

GRIPPING SYSTEMS

A-0. This Appendix specifies:

a) The forms and dimensions which shall be satisfied by the frontal and ventral gripping systems of the mobile containers, and
b) The permissible deformations.

A-1. Frontal and Ventral Gripping Systems

A-1.1 *Shape*

a) The face of the mobile container gripping side shall be smooth, except for the lower part of the ventral gripping system which protrudes.
b) For Class A containers, the container collar shall not have any intermediate ribs within the gripping area between the end ribs (*see* Fig. 1).
c) For Class B containers*, intermediate reinforcements (example ribs) may be placed on the collar.

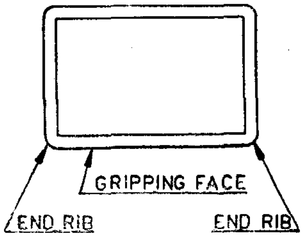


FIG. 1 CONTAINER COLLAR

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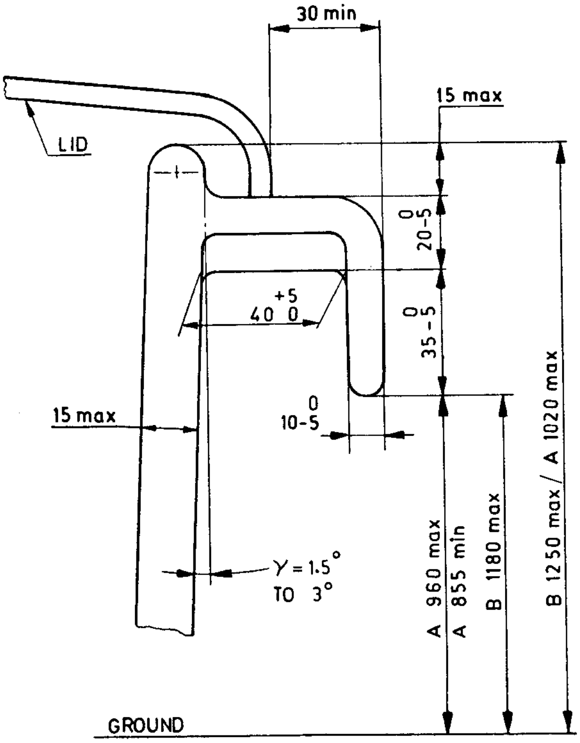
*Except for the 1 000 *l* capacity model which was not subjected to tests during the drawing up of this standard.

A-1.2 *Dimensions* — The dimensions have been defined to harmonize the gripping systems so that:

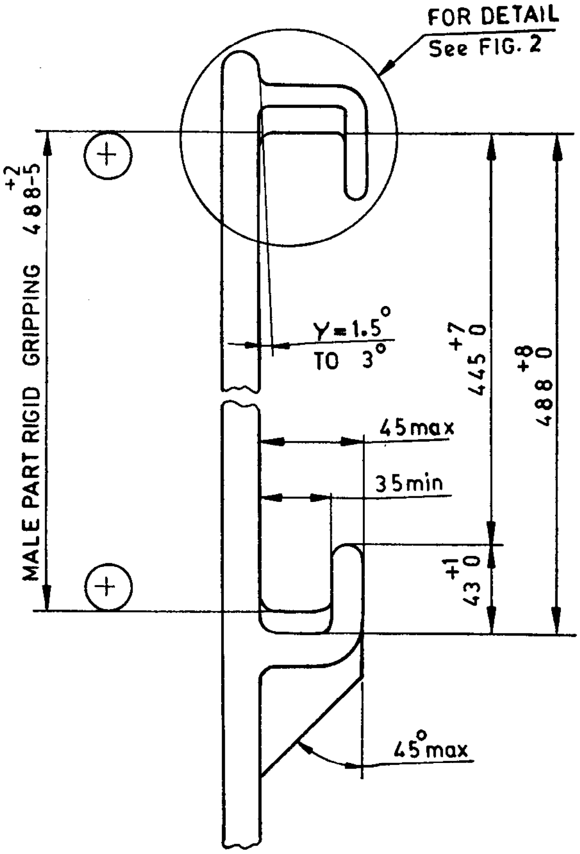
a) The frontal gripping system and the upper part of the ventral gripping systems are identical (*see* Fig. 2), and

b) For the ventral gripping system, the dimensions of the lower part or apron are given in Fig. 3.



All dimensions in millimetres.

FIG. 2 FRONTAL GRIPPING SYSTEM



All dimensions in millimetres.

FIG. 3 VENTRAL GRIPPING SYSTEM

A-2. Deformation — For Class A and B containers, the deformation permissible on the face of the container gripping side (*see* Fig. 4) shall conform to the tests defined in IS : 12402 (Part 2)-1988.

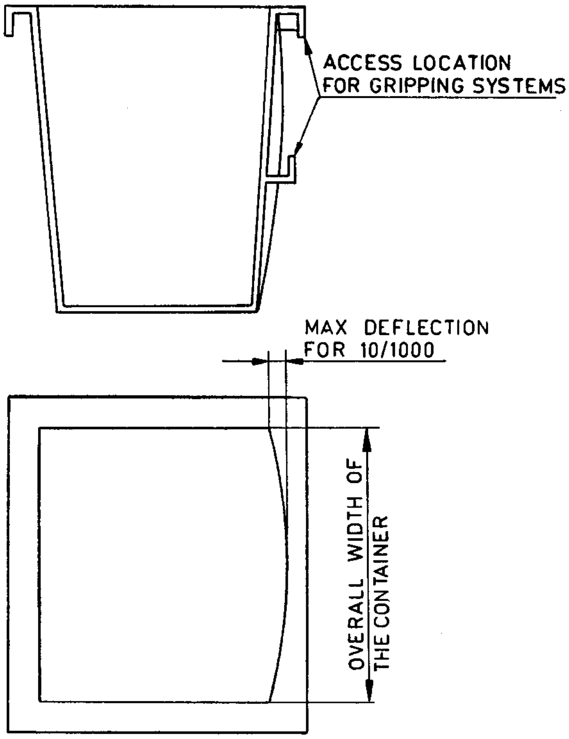

ACCESS LOCATION FOR GRIPPING SYSTEMS
MAX DEFLECTION FOR 10/1000
OVERALL WIDTH OF THE CONTAINER

FIG. 4 DEFORMATION PERMISSIBLE ON GRIPPING FACE

EXPLANATORY NOTE

This standard is destined for local communities to be used as a reference document in the drawing up of their contracts.

It enables all types of mechanical handling, conforming to the standard, to be used for all types of containers also defined in the standard, in order to take into account the existing container depot on one hand and on the other the non-centralization of purchases in the case of a group of communities (*see* Note).

Note — It is the mayor of each 'commune' who, within the scope of his policing powers and in application of the region's health regulations, defines the conditions under which household refuse must be prepared for collection; he, therefore, determines the type of container required for his 'commune'.

In the case of a communal service, where choices are not divided and where the existing depot is centralized, the persons incharge may opt for one of the two gripping systems defined in this standard.

In the case of an urban community, a district or a group of 'commune' it is the deliberative organization who decides on the purchasing of buckets and hence on the choice of the gripping system.

This standard is being issued in the following two parts:

Part 1 General characteristics

Part 2 Methods of test

In the preparation of this standard, assistance has been derived from French Standard NFH 96-110-1982 'Mobile containers for solid waste — General characteristics' issued by the L' Association Francaise de Normalisation (AFNOR).

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